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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/988,485

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Mark E. Tuttle

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EXAMINER

LEE, BENJAMIN C

ART UNIT

PAPER NUMBER

2632

DATE MAILED: 01/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/988,485

Applicant(s)

TUTTLE, MARK E.

Examiner

Benjamin C. Lee

Art Unit

2632

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 69, 70 and 73-100 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 69, 70, 73-82, 91 and 94-97 is/are allowed.
- 6) ☒ Claim(s) 83, 84, 86-88, 90, 92, 93 and 98-100 is/are rejected.
- 7) ☒ Claim(s) 85 and 89 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>12/19/05</u> | 6) <input type="checkbox"/> Other: ____ |

Response to Amendment

Claims Status

1. Claims 69-70 and 73-100 are pending.

Claim Rejections - 35 USC § 103

2. Claims 83-84, 86-88 and 98-99 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gunnarsson (US pat. #5,552,790) in view of Tuttle et al. (US pat. #5,448,110).

1) In considering claims 83:

a) Gunnarsson teaches forming a remote intelligent communication device comprising forming a ground plane (38 of Fig. 5b); forming an antenna (37 of Figs. 5a-5b) over the ground plane in a substantially electrically insulated relationship with respect to the ground plane (capacitively coupled according to col. 8, lines 37-39; Fig. 5b where 37 is separated from 38 by dielectric 39); electrically coupling transponder circuitry with the antenna (electronic component 45 of Figs. 5a-5b shown as an IC chip form and transponder integrated circuitry according to col. 6, line 22 to col. 7, line 11, and especially col. 7, lines 7-11); and having a housing having planar outermost surfaces using a covering of communication signal transparent protection foils (55, 56 of Figs. 5b and 4b and col. 9, lines 1-2) ;

While:

b) Tuttle et al. teaches in a remote intelligent communication device for various applications including object/people location, tracking and inventory control, etc. (col. 1, lines 16-65 and col. 2, lines 20-24) the use of an encapsulant (30, 42 according to Fig. 4D and the laminating/sealing process involved on col. 8, lines 51-55 and according to the Abstract; wherein such sealing constitutes an encapsulation and the layers 30, 32 constitute encapsulant according

Art Unit: 2632

to col. 2, lines 35-36) configured to form a housing about the antenna and the transponder circuitry, the encapsulant comprising an outermost planar surface of the housing (Fig. 4D).

In view of the teachings by Gunnarsson and Tuttle et al., it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to utilize a known housing encapsulation of Tuttle et al. in place of the foil-covering for providing an encapsulated protective housing for the transponder device of Gunnarsson to better guard it against the environmental elements as well as minor shock or other physical damage while maintaining the signal transparency characteristics intended by choosing any encapsulant that does not significantly block signals.

Furthermore, the formation steps of Tuttle et al. throughout the disclosure includes the printing of antenna (e.g. see Abstract) as a known way of providing the antenna in an efficient and economical manner (e.g. less material and less time requirements as compared to other known techniques such as etching, since etching starts with more material than needed and etch away unnecessary material to form the antenna, while printing involves using only the material needed for the antenna).

2) In considering claim 84, Gunnarsson and Tuttle et al. made obvious all of the claimed subject matter as in claim 83, including:

--the claimed providing a dielectric layer intermediate the ground plane and antenna (Fig. 5b of Gunnarsson.)

3) In considering claim 86, Gunnarsson and Tuttle et al. made obvious all of the claimed subject matter as claim 84, wherein:

Art Unit: 2632

-- the claimed forming the housing to contact a portion of the dielectric layer is met by the sealing encapsulation of the whole transponder package of Tuttle et al. and Gunnarsson, whereby side edges of the housing encapsulation contacts the dielectric layer.

4) In considering claim 87, Gunnarsson and Tuttle et al. made obvious all of the claimed subject matter as in claim 83, including the claimed wherein the electrically coupling comprises electrically coupling the transponder circuitry configured to implement backscatter communications (col. 6, lines 27-49 and col. 7, lines 12-17 of Gunnarsson whereby the response of the transponder via “reradiation” of the reader/interrogator signal by modulating the transponder circuit impedance are characteristic of and indicative of backscatter communication).

5) In considering claims 88, Gunnarsson and Tuttle et al. made obvious all of the claimed subject matter as in the consideration of claim 83, including:

- a) the formation steps of Tuttle et al. throughout the disclosure;
- b) the ground plane constitutes the claimed conductive layer over which the antenna and transponder circuitry are formed according to Figs. 5a-5b of Gunnarsson;
- c) the claimed RFID communication circuitry to communicate using radio frequency identification device communication to identify the radio frequency identification device (Figs. 1A-1B of Tuttle et al.; col. 1, lines 15-27 and col. 6, lines 47-49 of Gunnarsson);
- d) claimed “providing an encapsulant to form the device comprising a substantially void-free mass” is as illustrated by Figs. 4D to 9 of Tuttle et al., whereby it is obvious that any space shown are for illustration of the separate layers for discerning by a viewer, and in any case such relatively small space still constitutes “a SUBSTANTIALLY void-free mass”.

Art Unit: 2632

6) In considering claims 98, Gunnarsson and Tuttle et al. made obvious all of the claimed subject matter as in claim 83, including:

--the claimed integrated circuit comprising the transponder circuitry (45 in Fig. 5a of Gunnarsson).

7) In considering claims 99, Gunnarsson and Tuttle et al. made obvious all of the claimed subject matter as in claim 88, including:

--the claimed integrated circuit comprising the transponder circuitry (45 in Fig. 5a of Gunnarsson).

3. Claim 92 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gunnarsson in view of Tuttle et al. and Alicot et al. (US pat. #5,859,587).

1) In considering claim 92, Gunnarsson and Tuttle et al. made obvious all of the claimed subject matter as in claim 83, wherein:

Gunnarsson did not specify the manufacturing method for the antenna, while Tuttle et al. teaches using printing to implement the antenna (Abstract). However, conductive-ink printing to form a transponder antennas has been known in the art. For example, Alicot et al. teaches the known use of conductive-ink-printing to implement an antenna for a transponder (col. 2, lines 7-9). It would have been obvious to one of ordinary skill in the art at the time of the claimed invention to use a known conductive ink-printing technique such as taught by Alicot et al. to implement the printed antenna of Gunnarsson and Tuttle et al. in order to provide a thin and consistent antenna trace for minimized size of the antenna and as a result the whole transponder housing for convenient carriage by monitored users/objects.

Art Unit: 2632

4. Claims 90, 93 and 100 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gunnarsson in view of Tuttle et al., Brady et al. (US pat. #5,826,328) and Baird (US pat. #5,252,783).

1) In considering claims 90 and 93, Gunnarsson and Tuttle et al. made obvious all of the claimed subject matter as in claim 88, except:

the claimed flowing a flowable encapsulant over the entirety of the antenna and integrated circuit and curing the encapsulation.

While Tuttle et al. discloses curing the encapsulation (Fig. 4D) over the entirety of the antenna and transponder circuitry for encapsulation of the entire transponder, but not using a flowing type encapsulant, such use of flowable encapsulant for encapsulation has been known in the art. For example, Brady et al. teaches such known encapsulation (col. 5, line 64 to col. 6, line 10) of liquid encapsulant injection molding while Baird clarifies that such injection molding can involve curing of the encapsulant to solidify it (col. 2, lines 35-51).

In view of the above teachings, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention that a flowable encapsulating procedure such as taught by Brady et al. can be used as an alternative to provide the protective outer housing of the device of Gunnarsson and Tuttle et al., and further including the curing as taught by Baird that comes with such injection molding encapsulation to ensure strength, stableness and longevity of the encapsulant.

2) In considering claim 100, Gunnarsson and Tuttle et al. made obvious all of the claimed subject matter as in claim 83, plus the consideration of claims 90 and 93 further in view of Brady et al. and Baird, wherein:

Art Unit: 2632

Encapsulation over the entirety of the device using a flowable encapsulant and curing the encapsulation forms a solid device which is a void-free mass since flowable encapsulant fills voids present in the device.

Allowable Subject Matter

5. Claims 69-70, 73-82, 91 and 94-97 are allowed.
6. Claims 85 and 90 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

7. Applicant's arguments filed 12/19/05 have been fully considered but they are not persuasive.

1) Double patenting rejection has been withdrawn.

2) Regarding the rejection of claim 83, as stated in the rejection (previous and current Office action), motivation for combining Gunnarsson and Tuttle et al. has been sufficiently provided, in that the formation of circuit traces including an antenna using processes such as "etching" involves using more material than is necessary for the antenna, and then remove excess material away to form the antenna, whereas "printing" involves using only the amount of material forming the antenna, thus the "printing" process as compared to the "etching" technique relatively reducing the amount of material used. This, in light of the Gunnarsson and Tuttle et al. references, is obvious to one skilled in the art, and therefore the combination motivation is more than just hindsight.

Art Unit: 2632

3) Regarding claim 88, the claimed “substantially” void-free mass is met by Tuttle as indicated in the rejection. Furthermore, such claimed limitation does not require the claimed invention to be “totally” void-free, as opposed to new claim 100 which has been rejected under different ground. Please refer to the above rejection for detail.

4) In conclusion, the above rejection is maintained.

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Benjamin C. Lee whose telephone number is (571) 272-2963. The examiner can normally be reached on Mon -Thu 11:00Am-7:30Pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, Daniel Wu can be reached on (571) 272-2964. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2632

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Benjamin C. Lee
Primary Examiner
Art Unit 2632

B.L.